



# Commonwealth of Massachusetts Executive Office of Labor and Workforce Development Department of Labor Standards

Executive Order #511

## **Chemical Safety**

### Summary of Standards and Recommendations

*This summary of standards was prepared by the Massachusetts Department of Labor Standards (“DLS”) for informational purposes and does not constitute an official interpretation by OSHA or any other agencies/entities listed as a source of standards or guidance in this document, nor an exhaustive recitation of the requirements therein. Rather, the summary is provided for the health and safety committees to assess current health and safety management of this hazard against the nationally-recognized standard. As the information provided in this document is only a summary, please consult the full standard(s) as well as any other needed sources of technical assistance for developing or improving your chemical safety program.*

*It is important to note that state workers are not covered by OSHA standards; the information generated by the health and safety committees will serve to guide the Massachusetts Employee Safety and Health Advisory Committee in identifying effective and practical strategies and policies for improving the health and safety of state workers.*

#### Primary Technical Standard or Guideline:

#### **Massachusetts Right-to-Know Law, MGL Chapter 111F, Sections 1 – 21\*.**

Summary/Purpose: The purpose of this law is to ensure that employees are aware of and understand the health and safety hazards inherent in any hazardous chemical they may be exposed to as part of their job. Serious physical hazards from chemicals may include flammability, explosivity, and reactivity. Serious health hazards from chemicals may include respiratory effects, cancer, organ damage, central nervous system damage, brain damage, and reproductive effects. The intent of the law is also to ensure that employees understand what protections are necessary to keep them safe from these chemical hazards, and how to use these protections.

(Note: this state law is identical in intent and very similar in content to the federal OSHA Hazard Communication Standard, 29 CFR 1910.1200, which covers private sector workplaces in Massachusetts.)

Key elements of the Right-to-Know law:

- Workplace notice
- Labeling
- Training
- Material Safety Data Sheets (MSDSs)

Additionally, there are OSHA standards relative to hazards from specific chemicals. This includes maximum allowable levels of employee exposure to these chemicals, known as “exposure limits.” Certain very hazardous chemicals each have an entire and separate OSHA standard outlining a full host of required practices for protecting employees from the chemical, including asbestos, lead, cadmium, formaldehyde, and benzene. There is also a separate standard specific to lead exposure in construction.

Exposure limits, required protections, and other relevant information included in the OSHA standards described above should be included in the Material Safety Data Sheet (MSDS).

There are also other OSHA standards for specific work locations and activities. These include the OSHA laboratory standard, and training requirements for responders and clean-up technicians handling chemical spills and hazardous wastes.

Citations for all of these OSHA standards are provided in the “web links to standards” section near the end of this document.

*\* This is the primary national or state standard/guideline for this hazard. Your agency may be following an internal standard of practice or a standard from another source for this hazard. For the gap analysis, if you are following a standard other than the primary worker protection standard listed above, please indicate which standard, if any, is being followed by your agency. If this is an internal standard of practice, please report the basis upon which the determination was made to adopt the standard.*

#### Training and any Certification/Licensing Requirements:

**Annual** training is required under the Right-to-Know law. For each employee, training must include:

- The employee’s rights under Right-to-Know.
- How to read and understand a Material Safety Data Sheet (MSDS).
- The hazards present with each of the chemical products this employee may use on the job.
- For each chemical product an employee will use on the job, the specific protective measures that are needed and how to use them.

New employees must be trained within 30 days of employment.

The most important consideration with your Right-to-Know (RTK) training is how well it translates into a practical understanding by employees of how to keep themselves safe from chemical hazards on the job. Many workplaces conduct RTK training in order to meet the requirements, but employees do not come away from this training with enough understanding or information to really protect themselves from chemical hazards. There are a number of reasons this may occur. For one, in particular with use of outside trainers, employees are trained generally on chemical hazards, but the training does not cover the specific chemicals and their specific hazards the employees face on the job. Another problem is that the topic of chemical hazards is very technical and complicated, and it is not something that most people have any experience with. For this reason, many employees attend RTK training, but do not connect with or understand the material being presented. Another related cause is that MSDSs can be confusing, full of technical jargon, and very hard to interpret.

The Department of Labor Standards can provide you with a RKT train-the-trainers class or tools that can assist you with these concerns, see the DLS RTK assistance link in the web links section at the end of the document or call 617-969-7177. Also, check the “Seek Expert Assistance” section under administrative controls below.

#### Administrative Controls – Requirements under Right-to-Know:

##### Material Safety Data Sheets (MSDSs):

- MSDSs must be readily available to employees for all hazardous chemical products in the workplace.
  - MSDSs should be provided by the manufacturer with a shipment of a new chemical product, and also whenever there is a change in composition of the product. Employers can request the MSDS from the manufacturer if it is not provided. Also, MSDSs are typically available on each manufacturer’s website.
  - If you use a computer-based system for employee access to MSDSs, employees must be trained in how to use this system, and must also have ready access to computer terminals. If this is not the case, the requirement for availability of MSDSs has not been met.
- MSDSs must be retained for 30 years after the product is no longer in use at your workplace.

Posting of a Right-to-Know workplace notice – available in the DOS RTK assistance link in the web links section at the end of the document.

Labeling requirement:

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- Labeling is required on containers of more than one gallon or five pounds containing hazardous chemicals covered by the Right-to-Know law (for practical purposes, assume that any chemical product for which an MSDS has been prepared by the manufacturer is covered). It is recommended that smaller containers also be labeled with the same information.
- The label must contain the name of any chemical(s) in the product at a concentration greater than 1%, and for any cancer-causing chemicals (carcinogens) at a concentration greater than 0.1%.
- Labels must include any serious health hazards (such as cancer) or safety hazards (such as flammability) associated with this chemical.
- Manufacturer labels will typically meet these requirements.

*Other Required Administrative Controls:*

**Executive Order 515**

Executive Order 515, “Establishing an Environmental Purchasing Policy” serves to use the volume of state government purchasing to reduce the environmental and health-related impacts of the goods and services purchased by the Commonwealth. One section of EO 515, Toxics Reduction, has provisions that will lessen the hazard level of some of the chemical products state employees may use on the job. This builds on the existing Operational Services Division (OSD) environmentally preferable purchasing program (EPP), which includes identifying safer chemical products and making them available for purchase on state contract. EO 515 expands these efforts to include actions such as the EPP program setting standards for all cleaning products used by state agencies. The full EO 515 is available in the links section at the end of the document. Further recommendations on using purchasing to reduce employee risk from hazardous chemicals are given in the recommended administrative controls section below.

**Consider chemical hazards prior to purchasing chemical products and seek lower hazard alternatives.** If chemicals must be used, the most effective way to reduce the risk to employees from hazardous chemicals is to use chemicals that are less hazardous. Instead of going through all of the complicated technical assessment and effort to identify how to protect employees from chemical hazards, then implement, enforce, and maintain use of these protections, simply using chemicals that require little or no special protections will automatically keep employees safer. The place to begin this effort is before you purchase a chemical product. Going beyond the provisions of EO 515, some additional recommendations for moving to lower hazard alternatives before purchasing occurs are given below.

- Take advantage of the full range of Environmentally Preferable Products that have been selected for state contract (see link to the EPP program in the web links section of this document).

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- Use other services provided by the EPP program, such as the EPP Product Fair (see link to the EPP program in the web links section of this document).
- Evaluate the chemicals you are currently using and target the most hazardous for substitution or elimination.
- Talk to your chemical suppliers and request information and recommendations on lower hazard alternatives.
- Review the MSDS for any product before you purchase it (available online at the manufacturer's website or through a general internet search) and screen out products with significant health or safety hazards.
- Compare MSDSs of different brands/products for any item before selecting one for purchase.
- Develop a purchasing policy for all chemical products that seeks to limit the inherent level of hazard in the chemical products you purchase. For example, you may develop a list of banned chemicals, or you may set limiting criteria, such as a maximum hazard level rating.
- Resources and information on reducing use of hazardous chemicals in the workplace are also available from the Massachusetts Toxics Use Reduction Institute at <http://www.turi.org>.

**Seek expert assistance.** Your agency may not have enough knowledge in-house to adequately address chemical hazards. If you cannot find or interpret all of the hazard and protection information you need from the MSDS, there are many sources of expert assistance.

- Chemical products manufacturers/suppliers.
- Safety equipment suppliers.
- Hazardous waste removal contractors.
- Massachusetts Department of Labor Standards.

**Do not try and handle unknown chemicals without assistance.** The RTK law is intended to protect employees from hazardous chemicals in known products used on the job. There may be instances where the identity of a chemical product is not available, for example, there are many old, unlabelled bottles in the chemical supply closet, or an unlabeled chemical drum has been dumped on state property. In these cases, do not try and handle these unknown chemicals without calling in the assistance of a hazardous waste expert, for example a hazardous waste removal contractor or the fire department.

Engineering Controls – Requirements:

There are no specific engineering controls outlined in the MA Right-to-Know law. The intent of this law, however, is to make employees aware of the required protective controls outlined in the Material Safety Data Sheet (MSDS) provided with each hazardous chemical product so that these controls will be used. This may include

engineering controls such as chemical fume hoods, spot/local ventilation, or increased room ventilation.

Safety and Personal Protective Equipment Controls – Requirements:

**Personal Protective Equipment (PPE):**

There are no specific requirements for use of personal protective equipment or safety equipment in the MA Right-to-Know law. The intent of this law, however, is to make employees aware of the required protective controls outlined in the Material Safety Data Sheet (MSDS) provided with each hazardous chemical product so that these controls will be used. This may include face shields, indirectly vented goggles, chemical-protective gloves (many types), and chemical protective clothing.

If employee exposure to a specific chemical cannot be brought below the OSHA Permissible Exposure Limit (PEL) for that chemical through engineering controls such as increased ventilation, then respiratory protection is required to keep employee exposure below this level.

Note that the OSHA permissible exposure limits (PEL) have the weight of a regulatory standard, but these may not be entirely scientifically based due to the political process and competing interests that were present when these regulations were created. There are other exposure limits set by independent organizations that are purely science-based and typically lower and therefore more protective. These include NIOSH's recommended exposure limits (RELs) and ACGIH's threshold limit values (TLVs). DLS recommends that these more protective exposure limits be used.

**Safety Shower and Eyewash:** With use of injurious corrosives (such as strong acids and strong bases) a drench shower and eyewash are required per OSHA 1910.151(c). These must meet the requirements outlined in ANSI standard Z358.1 – 2009, "Emergency Eyewash and Shower Equipment." Requirements in this standard include:

- Eyewash/safety shower must be available within 10 seconds of unobstructed travel or 100 feet. It is unacceptable if an employee must travel through a doorway to reach the eyewash/shower.
- An eyewash must provide tepid water at 15 minutes at a minimum rate of 0.4 gallons per minute.
- Showers must provide 20 gallons per minute at a pressure that is not injurious to the user.
- Showers and eyewashes must be tested weekly and inspected annually, and maintained in operational condition at all times.

Web link to full standard or guideline:

*Informational resources identified below can also be found on our website at [www.mass.gov/dols/eo511](http://www.mass.gov/dols/eo511).*

Massachusetts Right-to-Know law and Massachusetts Department of Labor Standards, Right-to-Know assistance resources:

Go to [www.mass.gov/dols](http://www.mass.gov/dols) and select Right to Know from the lower left-side menu “Key Resources.”

OSHA Standards:

[www.osha.gov](http://www.osha.gov), select the “Regulations” tab from the top menu bar. For 1910 standards select the “General Industry” tab. For 1926 standards, select the “Construction” tab. Then, scroll down to find the standard by number.

- Hazard Communication Standard, 29 CFR 1910.1200
- Permissible Exposure Limits, 29 CFR 1910.1000, Table Z-1, Limits for Air Contaminants
- Standards for Specific Chemicals, 29 CFR 1910.1003 through 1910.1052
- Laboratory Standard, 29 CFR 1910.1450
- Lead in Construction, 29 CFR 1926.62
- Hazardous Waste Operations and Emergency Response (HAZWOPER), 29 CFR 1910.120

Massachusetts Operation Services Division, Environmentally Preferable Products. Go to [www.mass.gov/osd](http://www.mass.gov/osd), select “Environmentally Preferable Products Purchasing Program” from the left-side menu.

Executive Order 515, “Establishing an Environmental Purchasing Policy”

Go to [www.mass.gov/governor](http://www.mass.gov/governor) and select “Executive Orders” under “Legislation and Executive Orders” on the lower center of the home page. Scroll down to Executive Order #515.